

METHODS AND APPARATUS FOR ACCESSING A DOUBLY LINKED LIST
IN A DATA STORAGE SYSTEM

ABSTRACT OF THE DISCLOSURE

5 A data storage system has storage devices, a processor which is configured to move data to and from the storage devices, and a bus coupled to the processor. The data storage system further includes a memory board having (i) an interface which couples to the bus, (ii) memory which is configured to store a doubly linked list data structure, and (iii) a memory board control circuit coupled to the interface and the memory. The
10 memory board control circuit is capable of accessing the data structure. In particular, the memory board control circuit is configured to receive a modify command from the processor through the interface and the bus, atomically modify the data structure in accordance with the modify command, and provide a result to the processor through the interface and the bus in response to modifying the data structure.